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Our Pal, the Computer

By Joshua Lederberg

THAT ELECTRONIC technology like computers might dehumanize our culture is almost a cliché. However, I have yet to hear that any computer has committed a homicide. If perchance some human has suffocated in a sea of output paper, or been clogged by informational bits or strangled by magnetic tape, there was no malice aforethought. Or if there was malice, it belonged to some soulful human.

Yet we know that in many aspects of life, individuals may become digitized. People prefer ambiguity, resent being called precisely to account whether for traffic violations or income tax. This preference may be fundamentally irrational. If we demand some set level of compliance with law, and the social order eventually does, we must also give the police the means to enforce it.

Faced with the hard choice, I prefer the certain justice of having the Internal Revenue Service computers analyze my bank account over having to submit to a capricious third degree. Nevertheless, relentless justice may still be labeled inhuman. We ask: Are there ways in which the computer can bolster individuality? Do we submit to Marshall McLuhan's fatalistic dogma that "The medium is the message," that accidental technology shapes more than it serves human aims? Or do we perceive that biology, the multiplication of human numbers, presents the demand for printing press technology, that the abundance of people is the most powerful dehumanizing force?

Science and Man

In a recent issue of Scientific American magazine, Prof. John McCarthy of Stanford University paints a more optimistic picture.

"The speed, capacity and universality of computers make them machines that can be used to foster diversity and individuality in our industrial civilization, as opposed to the uniformity and conformity that have hitherto been the order of the day. Decisions that now have to be made in the mass can in the future be made separately, case by case. To take a practical example, it can be decided whether or not it is safe for an automobile to go through an intersection each time the matter comes up, instead of subjecting the flow of automobiles to regulation by traffic lights. A piece of furniture, a household appliance or an automobile can be designed to the specifications of each user. The decision whether to go on to the next topic or review the last one can be made in accordance with the interests of the child rather than for the class as a whole. In other words, computers can make it possible for people to be treated as individuals in many situations where they are now lumped in the aggregate."

SOME EXAMPLES are already working. When a bank calculates interest daily, it rewards the individual depositors fairly and congenially.

Scheduling programs help to minimize the disappointments when students try to take advantage of flexible curricula offered by schools. A similar matching game places interns and residents in hospitals that optimize the balance of mutual preferences, without tedious negotiations under unfair pressures.

One of the most utilitarian matching services was recently advertising in San Francisco, registration for computer carpools: the computer would then cluster riders by where they live and work.

Telephone, computer, television and the laser, welded together, would make the most creative technology for the expansion of human individuality. With its person-to-person selectivity, the telephone already stands in marked contrast to mass communications.

Television, as such, is a debatable medium for educational purposes. Ought we not better ask a videotape library for the news or the art or science or literary criticism we wanted to see and hear, rather than passively submit to the tastes of a centralized bureau in its choices of simultaneous broadcast?

Before we make large scale commitments to mass diffusion, we ought to make a careful study of selective choice, a la telephone, supported by computerized traffic management. The videotelephone would be prohibitively expensive with today's techniques and organization; but cheap wideband communications by laser need not be more than a decade away if we focus on it as an important human need.

If electronics restores individual choice of communication and helps resolve the paradox of manifold loneliness, would we deny its rightful acclaim as rehumanizer of an overpeopled world?

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